

REMARKS/ARGUMENTS

This Amendment is in response to the Office Action mailed September 10, 2007. Claims 1-20 were pending in the present application. This Amendment amends claims 1, 12, 13, 14, and 17, without adding or canceling any claims, leaving pending in the application claims 1-20. Reconsideration of the rejected claims is respectfully requested.

I. Objection to the Claims

Claims 1, 13, and 14 are objected to for lacking proper antecedent basis for the term "the same circuit board." Applicants appreciate the Examiner's helpful suggestion, and have amended the claims accordingly, such that there is no problem with antecedent basis for the term as amended. Applicants therefore respectfully request that the objections with respect to these claims be withdrawn.

II. Rejection under 35 U.S.C. §112

Claims 13 and 17 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, these claims are rejected as reciting the term "the plurality of circuit boards," for which there is stated to be no antecedent basis and thus allegedly leads to confusion with respect to the previously cited circuit board. These claims have been amended for purposes of clarity, and as such there should be no problems with antecedent basis or cause for confusion between terms cited therein. Applicants therefore respectfully request that the §112 rejections with respect to these claims be withdrawn.

III. Rejection under 35 U.S.C. §103

Claims 1-20 are rejected under 35 U.S.C. §103(a) as being obvious over *Cramer* (US 6,920,580) in view of *Schultz* (US 2003/0145130). Applicants respectfully submit that these references do not teach or suggest each element of these claims.

For example, Applicants' claim 1 as amended recites a disc controller comprising:

a network controlling unit configured to receive a data input/output request sent from an external device through a network; and
a disc controlling unit formed in a same circuit board in which the network controlling unit is formed, the disc controlling unit coupled to the network controlling unit by an internal bus provided in the circuit board,
wherein the disc controlling unit is configured to receive a command sent from the network controlling unit through the internal bus and execute a data input/output for a disc drive in response to the command;
wherein the network controlling unit is configured to send the command, for which a plurality of addresses are set, to the disc controlling unit;
wherein the disc controlling unit is configured to receive the command and execute data input/output corresponding to each of the addresses set in the command for the disc drive; and
wherein when a file to be processed based on the data input/output request is to be divided and stored in a plurality of storage areas of a disc drive, the network controlling unit is configured to generate the command in which a combination of a number of blocks and a plurality of logical addresses for designating respective divided storage areas are set

(emphasis added). Such limitations are neither taught nor suggested by these references.

As discussed in Applicants' specification, advantages are obtained by providing a network controlling unit and a disc controlling unit in/on the same circuit board, whereby the components can communicate using a bus of the circuit board so that the components can execute "a highly flexible transmission to each other without restriction due to difference in protocol" (paragraphs [0009]; [0030]-[0032]). In the claims as amended, the network controlling unit generates a single command in which "a combination of a number of blocks and a plurality of logical addresses for designating respective divided storage areas are set" when "a file to be processed based on the data input/output request is to be divided and stored in a plurality of storage areas of a disc drive" (see also paragraphs [0063]-[0068]). Previously, such as in conventional Fibre Channel transmissions, a server computer having received an I/O request needed to send a plurality of commands to the disc controlling unit, which results in a larger overhead for transmission and a lower performance of the overall storage system (paragraphs [0033]; [0083]).

The inventions of *Cramer* and *Schultz* are directed toward solving different problems in different systems, even from each other, and do not teach or suggest such limitations. Due to the nature of the references, there would be no motivation to combine the references, or teaching as to how to combine the references, and even if for sake of argument the references were

combined, they would not render Applicants' claim 1 obvious. For example, *Cramer* is directed to providing failover in a server/filer cluster between filers/servers/nodes, utilizing a failover monitor and failure partners (col. 2, lines 57-67; col. 5, lines 36-59). *Schultz* is directed to ensuring that each controller in a storage system has the same firmware version, and accomplishes this by transmitting version information between the controllers, and if one controller is found to have an older version, copying over the newer version from one of the other controllers (paragraphs [0030]-[0036]). Neither reference teaches or suggests a network controlling unit that generates a single command in which "a combination of a number of blocks and a plurality of logical addresses for designating respective divided storage areas are set" when "a file to be processed based on the data input/output request is to be divided and stored in a plurality of storage areas of a disc drive" as recited in Applicants' claim 1 as amended.

Further, even if the references were combined, the reference would at best teach a storage system wherein each controller had a failover partner, and wherein each of those controllers were controlled to have the same firmware version. The combination would not improve performance and reduce transmission overhead by providing a network controlling unit and disc controlling unit on the same circuit board, wherein a single command is generated by the network controlling unit such that "a combination of a number of blocks and a plurality of logical addresses for designating respective divided storage areas are set" when "a file to be processed based on the data input/output request is to be divided and stored in a plurality of storage areas of a disc drive." As such, these references cannot render obvious Applicants' claim 1, or the claims that depend therefrom, individually or in combination. Further, as these references are directed to solving different problems in different systems, there would be no motivation to provide such features. The other claims recite limitations that similarly are not rendered obvious by these references, for reasons including those set forth above. Applicants therefore respectfully request that the obviousness rejections with respect to these claims be withdrawn.

IV. Amendment to the Claims

Unless otherwise specified or addressed in the remarks section, amendments to the claims are made for purposes of clarity, and are not intended to alter the scope of the claims or limit any

equivalents thereof. The amendments are supported by the specification and do not add new matter.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,



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